

New Era of Artificial Intelligence in Education: Towards a Sustainable Multifaceted Revolution

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Abstract

The recent high performance of ChatGPT on several standardized academic tests has thrust the topic of artificial intelligence (AI) into the mainstream conversation about the future of education. As deep learning is poised to shift the teaching paradigm, it is essential to have a clear understanding of its effects on the current education system to ensure sustainable development and deployment of AI-driven technologies at schools and universities. This research aims to investigate the potential impact of AI on education through review and analysis of the existing literature across three major axes: applications, advantages, and challenges. Our review focuses on the use of artificial intelligence in collaborative teacher–student learning, intelligent tutoring systems, automated assessment, and personalized learning. We also report on the potential negative aspects, ethical issues, and possible future routes for AI implementation in education. Ultimately, we find that the only way forward is to embrace the new technology, while implementing guardrails to prevent its abuse.